

# FES

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- Gravity **17.2 BLG**
- ABV ---
- IBU **48**
- SRM **40**
- Style **Foreign Extra Stout**

## Batch size

- Expected quantity of finished beer **40 liter(s)**
- Trub loss **10 %**
- Size with trub loss **44 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **48.4 liter(s)**

## Mash information

- Mash efficiency **90 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **33.1 liter(s)**
- Total mash volume **44.2 liter(s)**

## Steps

- Temp **67 C**, Time **60 min**

## Mash step by step

- Heat up **33.1 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Sparge using **26.3 liter(s)** of **76C** water or to achieve **48.4 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pale Ale	5.6 kg (50.7%)	79 %	6
Grain	Żytni	1 kg (9.1%)	85 %	8
Grain	Pszeniczny	3 kg (27.2%)	85 %	4
Grain	Strzegom Czekoladowy 1200	0.34 kg (3.1%)	68 %	1202
Grain	Amber Malt	0.3 kg (2.7%)	75 %	43
Grain	pale chocolate	0.3 kg (2.7%)	75 %	600
Grain	prażona pszenica	0.5 kg (4.5%)	75 %	1200

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Admiral	50 g	60 min	14.3 %
Boil	Premiant	30 g	60 min	8 %
Aroma (end of boil)	Golding	30 g	10 min	5 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Wyeast - Scottish Ale	Ale	Slant	500 ml	Wyeast Labs

## Extras

Type	Name	Amount	Use for	Time
Flavor	curacao	20 g	Boil	5 min
Flavor	skórka słodkiej pomarańczy	20 g	Boil	5 min